

What Is Claimed Is:

1. An isolated polynucleotide comprising a nucleic acid sequence at least 95% identical to a member selected from the group consisting of:

(a) a nucleotide sequence encoding the polypeptide shown as residues 1 to 207 of SEQ ID NO:2;

(b) a nucleotide sequence encoding the polypeptide shown as residues 2 to 207 of SEQ ID NO:2;

(c) a nucleotide sequence encoding the polypeptide shown as residues 28 to 207 of SEQ ID NO:2;

(d) a nucleotide sequence encoding the polypeptide shown as residues 30 to 207 of SEQ ID NO:2;

(e) a nucleotide sequence encoding the polypeptide shown as residues 165 to 183 of SEQ ID NO:2;

(f) a nucleotide sequence encoding the complete polypeptide encoded by the human cDNA contained in clone HKAPI15;

(g) a nucleotide sequence encoding the complete polypeptide encoded by the human cDNA contained in clone HKAPI15 excepting the N-terminal methionine;

(h) a nucleotide sequence encoding the mature polypeptide encoded by the human cDNA contained in clone HKAPI15; and

(i) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), (c), (d), (e), (f), (g), or (h) above.

2. An isolated polynucleotide comprising a nucleic acid sequence selected from the group consisting of:

(a) a nucleotide sequence which encodes a biologically active fragment of the polypeptide shown as residues 1 to 207 of SEQ ID NO:2; and

(b) a nucleotide sequence complementary to the nucleotide sequence of (a).

3. The nucleic acid molecule of claim 1 wherein said polynucleotide has the nucleotide sequence in Figure 1 (SEQ ID NO:1) encoding the KDI polypeptide having the amino acid sequence in positions 165 to 183 of SEQ ID NO:2.

4. The nucleic acid molecule of claim 1 wherein said polynucleotide has the nucleotide sequence in Figure 1 (SEQ ID NO:1) encoding the KDI polypeptide having the amino acid sequence in positions 28 to 207 of SEQ ID NO:2.

5. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of residues n-207 of SEQ ID NO:2, where n is an integer in the range of 1-59;
- (b) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of residues 1-m of SEQ ID NO:2, where m is an integer in the range of 183-207;
- (c) a nucleotide sequence encoding a polypeptide having the amino acid sequence consisting of residues n-m of SEQ ID NO:2, where n and m are integers as defined respectively in (a) and (b) above;
- (d) a nucleotide sequence encoding the polypeptide encoded by the human cDNA in clone HKAPI15 wherein said polypeptide is lacking between 1 and 58 amino acids from its N-terminus;
- (e) a nucleotide sequence encoding the polypeptide encoded by the human cDNA in clone HKAPI15 wherein said polypeptide is lacking between 1 and 23 amino acids from its C-terminus; and
- (f) a nucleotide sequence encoding the polypeptide encoded by the human cDNA in clone HKAPI15 wherein said polypeptide has any combination of N-terminal and C-terminal deletions described in (d) and (e), above.

6. An isolated nucleic acid molecule comprising a polynucleotide which hybridizes under stringent hybridization conditions to a polynucleotide having a nucleotide sequence identical to a nucleotide sequence in (a), (b), (c), (d), (e), (f), (g) or (h) of claim 1 wherein said polynucleotide which hybridizes does not hybridize under stringent hybridization conditions to a polynucleotide having a nucleotide sequence consisting of only A residues or of only T residues.

7. An isolated nucleic acid molecule comprising a polynucleotide which encodes the amino acid sequence of an epitope-bearing portion of a KDI polypeptide having an amino acid sequence in (a), (b), (c), (d), (e), (f) or (g) of claim 1.

8. The isolated nucleic acid molecule of claim 7 comprising a nucleic acid sequence which encodes an epitope-bearing portion of a KDI polypeptide selected from the group consisting of: a polypeptide comprising amino acid residues from about Ser 49 to about Ser 54 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about Cys 59 to about Ala 65 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about Pro 78 to about Tyr 88 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about His 101 to about Gln 113 in SEQ ID NO:2; a polypeptide comprising amino acid residues Gln 120 to about Glu 123 in SEQ ID NO:2; a polypeptide comprising amino acid residues Cys 128 to about Pro 155 in SEQ ID NO:2, a polypeptide comprising amino acid residues from about Leu 160 to about Arg 168 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about Asn 171 to about Asp 180 in SEQ ID NO:2; a polypeptide comprising amino acid

residues from about Val 186 to about Cys 193 in SEQ ID NO:2; and a polypeptide comprising amino acid residues Phe 204 to about Lys 207 in SEQ ID NO:2.

9. A method for making a recombinant vector comprising inserting an isolated nucleic acid molecule of claim 1 into a vector.

10. A recombinant vector produced by the method of claim 9.

11. A method of making a recombinant host cell comprising introducing the recombinant vector of claim 10 into a host cell.

12. A recombinant host cell produced by the method of claim 11.

13. A recombinant method for producing a KDI polypeptide, comprising culturing the recombinant host cell of claim 12 under conditions such that said polypeptide is expressed and recovering said polypeptide.

14. An isolated KDI polypeptide comprising an amino acid sequence at least 95% identical to a member selected from the group consisting of:

- (a) the polypeptide shown as residues 1 to 207 of SEQ ID NO:2;
- (b) the polypeptide shown as residues 2 to 207 of SEQ ID NO:2;
- (c) the polypeptide shown as residues 28 to 207 of SEQ ID NO:2;
- (d) the polypeptide shown as residues 165 to 183 of SEQ ID NO:2;
- (e) the complete polypeptide encoded by the human cDNA contained in clone HKAPI15;
- (f) the complete polypeptide encoded by the human cDNA contained in clone HKAPI15 excepting the N-terminal methionine;
- (g) the mature polypeptide encoded by the human cDNA contained in clone HKAPI15.

15. An isolated polypeptide comprising an epitope-bearing portion of the KDI protein, wherein said portion is selected from the group consisting of: a polypeptide comprising amino acid residues from about Ser 49 to about Ser 54 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about Cys 59 to about Ala 65 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about Pro 78 to about Tyr 88 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about His 101 to about Gln 113 in SEQ ID NO:2; a polypeptide comprising amino acid residues Gln 120 to about Glu 123 in SEQ ID NO:2; a polypeptide comprising amino acid residues Cys 128 to about Pro 155 in SEQ ID NO:2, a polypeptide comprising amino acid residues from about Leu 160 to about Arg 168 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about Asn 171 to about Asp

16. An isolated antibody that binds specifically to a KDI polypeptide of claim 14.
17. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence which is at least 95% identical at least 50 contiguous nucleotides from SEQ ID NO:1.
18. An isolated polypeptide comprising an amino acid sequence of a biologically active fragment of the polypeptide shown as residues 1 to 207 of SEQ ID NO:2.
19. A pharmaceutical composition comprising a polypeptide of claim 14 in a pharmaceutically acceptable carrier.
20. A method of treating viral infection in a patient comprising administering to the patient the composition of claim 19.